the Human brain usually consists of an anterior part, which is an anterior limiting sulcus of the area striata, and a posterior part, which is a mere indentation (or indentations) of *part* of the mesial area striata, therefore it is not exact to speak of these similarly named furrows as being strictly homologous.]

"On the Acoustic Shadow of a Sphere." By LORD RAYLEIGH, O.M., F.R.S. With an Appendix, giving the Values of Legendre's Functions from P_0 to P_{20} at Intervals of Five Degrees. By Professor A. LODGE. Received December 28, 1903,—Read January 21, 1904.

(Abstract.)

The problem here considered is that of the intensity of sound at the various points of a rigid and fixed sphere on which plane waves impinge, or reciprocally the intensity at a distance in various directions due to a source of sound situate upon the surface of the sphere. The analytical solution is readily given, but in the interpretation everything depends upon the ratio of the wave-length ($2\pi/k$) to the circumference ($2\pi c$). If kc be small, the sphere has little effect. In my book on the "Theory of Sound," § 328, I have considered (but only for certain special directions) the case of $kc = 2$. The extension to various directions is now given; and the calculation is pushed to the case of $kc = 10$, about as far as is practicable. For this purpose the values of Legendre's Functions up to P_{20} are required.

$kc = 10$.

θ.	$4(F^2+G^2)$.	θ.	$4(F^2+G)$.
0	3·8300	105	1·06117
15	3·8176	120	0·56815
30	3·7148	135	0·27890
45	3·4978	150	0·13338
60	3·1098	165	0·09492
75	2·4984	170	0·12591
90	1·7510	175	0·69395
		180	1·09263

The table gives the intensity in directions making angles θ with the radius which passes through the source. On the same scale the intensity would be unity were the sphere removed. The most interesting feature is the existence of a fairly good shadow between 135° and 170°, and the subsequent rise of intensity in the neighbourhood

of 180°. This corresponds in some degree with the bright spot in the centre of the optical shadow of a circular disc.

The problem which arises when both the source and the point of observation are situated upon the sphere is more difficult. It is treated less completely, but some results of interest are obtained for the case of $kc = 10$.

The Appendix by Professor A. Lodge contains tables of Legendre's Functions up to P_{20} for angles ranging at intervals of 5°, accompanied by a statement of the method of calculation. It is believed that these values may prove useful in other physical investigations.

"The Significance of the Zoological Distribution, the Nature of the Mitoses, and the Transmissibility of Cancer." By E. F. Bashford, M.D., and J. A. Murray, M.B., B.Sc. Communicated by Professor J. Rose Bradford, F.R.S. Received January 12,—Read January 21, 1904.

[Plate 2.]

The object of this communication is to relate some results of the work conducted under the immediate direction of the Executive Committee of the Cancer Research Fund during the past year. We believe that these results will convince others of the important practical assistance which biologists generally can give in the further elucidation of certain problems of cancer which must be settled before preventive and curative measures can be devised. It will also be made evident that the elucidation of cancer is something more than a problem of human pathology.

We shall adduce evidence tending to show that the wide zoological distribution, the character of the mitoses, and the transmissibility of cancer, are nearly related phenomena with a common basis.

The fundamental significance of ascertaining the extent of the zoological distribution of cancer was recognised by the Cancer Research Fund from the first, and determined the prosecution of definite lines of inquiry, not only with the object of eliciting new facts in regard to the zoological distribution itself, but also with the object of discovering cancer in animals well adapted to cytological and experimental observations.

Zoological Distribution.

Within the past year specimens of malignant new growths have accumulated from all the domesticated animals and from many other